

Claim Amendments

1-18. (canceled)

19. (currently amended) A product pasteurizing section for a beverage container filling plant for filling beverage containers such as bottles or containers with a beverage, said product pasteurizing section being configured to permit at least heating and cooling of the content in containers, said product pasteurizing section comprising:

a housing comprising a roof arrangement, an inlet arrangement configured to receive containers into said housing, and an outlet arrangement configured to discharge containers from said housing;

a plurality of spray arrangements being disposed integrally in said roof arrangement;

said roof arrangement being configured to receive said plurality of spray arrangements;

each of said plurality of spray arrangements comprising a spray nozzle being configured to spray a stream of liquid;

each of said spray nozzles being disposed integrally within said roof arrangement;

said plurality of spray arrangements and said roof arrangement being configured to be disposed above the containers to permit

spraying of containers from above the containers;

said plurality of spray arrangements in said roof arrangement comprising:

a first roof portion of spray arrangements;

said first roof portion being configured:

to receive containers from said inlet arrangement; and

to be disposed to heat the beverage in containers with a first, heated, spray of liquid having a predetermined first temperature to bring the beverage in containers to a temperature below the pasteurization temperature of the beverage;

a second roof portion of spray arrangements;

said second roof portion being configured to pasteurize the beverage in containers with a second, heated, spray of liquid having a predetermined second temperature to bring the beverage in containers to the pasteurization temperature of the beverage; and

a third roof portion of spray arrangements;

said third roof portion being configured to cool the beverage in containers with a third spray of liquid having a

predetermined third temperature to bring the beverage in containers to a temperature below said second temperature;

said second roof portion being configured:

to be disposed adjacent to said first roof portion; and

to receive containers from said first roof portion; and

said third roof portion being configured:

to be disposed adjacent to said second roof portion;

to receive containers from said second roof portion;

and

to discharge containers through said outlet

arrangement from said housing.

20. (currently amended) The product pasteurizing section according to claim 19, wherein:

said housing has a longitudinal axis extending from said inlet arrangement to said outlet arrangement of said housing;

said roof arrangement comprises a plurality of depressions configured and disposed to receive liquid to be sprayed over containers;

each one of said depressions has a pair of walls extending in the direction of said longitudinal axis of said housing;

each one of said depressions has a planar bottom surface;
each one of said pair of walls has a length;
each one of said depressions has a width between a pair of walls;

said length of each wall is greater than said width between a pair of walls;

~~said plurality of spray arrangements comprises a plurality of spray orifices configured and disposed to spray liquid over containers;~~

each planar bottom surface is configured to have a plurality of said spray nozzles disposed therein;

said housing has a first side;

said inlet arrangement is disposed in said first side;

said housing has a second side;

said outlet arrangement is disposed in said second side;

said roof arrangement comprises a first inlet for liquid;

said first inlet for liquid is disposed at said first side of said housing;

said first inlet is configured to permit entry of liquid in a flow of liquid in the direction from said first side to said second side of said housing;

at least one of said plurality of depressions is configured and disposed to receive liquid from said first inlet and to pass the received liquid through said spray nozzles orifices disposed in the planar bottom surface of said at least one depression over containers;

said roof arrangement comprises a second inlet for liquid;

said second inlet for liquid is disposed at said second side of said housing;

said second inlet liquid is configured to permit entry of liquid in a flow of liquid in the direction from said second side to said first side of said housing; and

at least one of said plurality of depressions is configured and disposed to receive liquid from said second inlet and to pass the received liquid through said spray nozzles orifices disposed in the planar bottom surface of said at least one depression over containers.

21. (previously amended) The product pasteurizing section according to claim 20, wherein each one of said pair of walls comprises a pair of sloping walls.

22. (previously amended) The product pasteurizing section according to claim 21, wherein:

said housing comprises a frame structure;

said roof arrangement comprises a plurality of roof sections disposed in said frame structure;

 said roof arrangement comprises a plurality of cover arrangements disposed above said plurality of roof sections;

 said plurality of cover arrangements is configured to cover said plurality of roof sections; and

 at least one of said plurality of cover arrangements comprises a hinge arrangement configured and disposed to permit movement of said at least one cover arrangement between a first position in which said at least one cover arrangement is disposed to cover a plurality of spray arrangements and a second position in which said at least one cover arrangement is disposed to expose a plurality of spray arrangements.

23. (previously amended) The product pasteurizing section according to claim 19, wherein:

 said roof arrangement comprises a single cover arrangement; and

 said cover arrangement is disposed above said plurality of spray arrangements and configured to cover substantially all of said plurality of spray arrangements.

24. (canceled)

25. (previously amended) The product pasteurizing section according to claim 19, wherein:

 said roof arrangement comprises a first, lower roof portion and a second, upper, roof portion disposed above said first, lower, roof portion; and

 a seal is disposed between said first, lower, roof portion and said second, upper, roof portion to seal said first and second roof portions.

26. (currently amended) The product pasteurizing section according to claim 25, wherein:

 said first, lower, roof portion comprises a flat portion;

 said flat portion is configured to extend over a substantial portion of said roof arrangement;

 a plurality of said spray nozzles orifices is disposed in said flat portion;

 said plurality of spray nozzles orifices is disposed and configured to spray liquid over sealed containers;

 said second, upper, roof portion comprises a cover for said first, lower, roof portion;

said second, upper, roof portion comprises a conduit arrangement; and

said conduit arrangement is configured and disposed to permit the supply of liquid to said plurality of spray nozzles orifices.

27-30. (canceled)

31. (currently amended) A product pasteurizing section for a beverage container filling plant for filling beverage containers such as bottles or containers with a beverage, said product pasteurizing section being configured to permit at least heating and cooling of the content in containers, said product pasteurizing section comprising:

a housing comprising a roof arrangement, an inlet arrangement configured to receive containers into said housing, and an outlet arrangement configured to discharge containers from said housing;

a plurality of spray arrangements being disposed within said roof arrangement;

each of said plurality of spray arrangements comprising a spray nozzle being configured to spray a stream of liquid;

each of said spray nozzles being disposed integrally within said roof arrangement;

said plurality of spray arrangements and said roof arrangement

being configured to be disposed above the containers to permit spraying of containers from above the containers;
said plurality of spray arrangements in said roof arrangement comprising:

a first roof portion of spray arrangements;

said first roof portion being configured:

to receive containers from said inlet arrangement; and
to be disposed to heat the beverage in containers with a first, heated, spray of liquid having a predetermined first temperature to bring the beverage in containers to a temperature below the pasteurization temperature of the beverage;

a second roof portion of spray arrangements;

said second roof portion being configured to pasteurize the beverage in containers with a second, heated, spray of liquid having a predetermined second temperature to bring the beverage in containers to the pasteurization temperature of the beverage; and

a third roof portion of spray arrangements;

said third roof portion being configured to cool the

beverage in containers with a third spray of liquid having a predetermined third temperature to bring the beverage in containers to a temperature below said second temperature;

said second roof portion being configured:

to be disposed adjacent to said first roof portion; and

to receive containers from said first roof portion; and

said third roof portion being configured:

to be disposed adjacent to said second roof portion;

to receive containers from said second roof portion;

and

to discharge containers through said outlet

arrangement from said housing.

32. (currently amended) The product pasteurizing section according to claim 31, wherein:

said housing has a longitudinal axis extending from said inlet arrangement to said outlet arrangement of said housing;

said roof arrangement comprises a plurality of depressions configured and disposed to receive liquid to be sprayed over containers;

each one of said depressions has a pair of walls extending in

the direction of said longitudinal axis of said housing;
each one of said depressions has a planar bottom surface;
each one of said pair of walls has a length;
each one of said depressions has a width between a pair of walls;

said length of each wall is greater than said width between a pair of walls;

~~said plurality of spray arrangements comprises a plurality of spray orifices configured and disposed to spray liquid over containers;~~

each planar bottom surface is configured to have a plurality of said spray nozzles disposed therein;

said housing has a first side;

said inlet arrangement is disposed in said first side;

said housing has a second side;

said outlet arrangement is disposed in said second side;

said roof arrangement comprises a first inlet for liquid;

said first inlet for liquid is disposed at said first side of said housing;

said first inlet is configured to permit entry of liquid in a flow of liquid in the direction from said first side to said second side of said

housing;

at least one of said plurality of depressions is configured and disposed to receive liquid from said first inlet and to pass the received liquid through said spray nozzles orifices disposed in the planar bottom surface of said at least one depression over containers;

said roof arrangement comprises a second inlet for liquid;

said second inlet for liquid is disposed at said second side of said housing;

said second inlet liquid is configured to permit entry of liquid in a flow of liquid in the direction from said second side to said first side of said housing; and

at least one of said plurality of depressions is configured and disposed to receive liquid from said second inlet and to pass the received liquid through said spray nozzles orifices disposed in the planar bottom surface of said at least one depression over containers.

33. (original) The product pasteurizing section according to claim 32, wherein each one of said pair of walls comprises a pair of sloping walls.

34. (original) The product pasteurizing section according to claim 33, wherein:

said housing comprises a frame structure;
 said roof arrangement comprises a plurality of roof sections disposed in said frame structure;
 said roof arrangement comprises a plurality of cover arrangements disposed above said plurality of roof sections;
 said plurality of cover arrangements is configured to cover said plurality of roof sections; and
 at least one of said plurality of cover arrangements comprises a hinge arrangement configured and disposed to permit movement of said at least one cover arrangement between a first position in which said at least one cover arrangement is disposed to cover a plurality of spray arrangements and a second position in which said at least one cover arrangement is disposed to expose a plurality of spray arrangements.

35. (original) The product pasteurizing section according to claim 31, wherein:

 said roof arrangement comprises a single cover arrangement; and
 said cover arrangement is disposed above said plurality of spray arrangements and configured to cover substantially all of said plurality

of spray arrangements.

36. (currently amended) The product pasteurizing section according to claim 31, wherein:

 said roof arrangement comprises a first, lower roof portion and a second, upper, roof portion disposed above said first, lower, roof portion;

 a seal is disposed between said first, lower, roof portion and said second, upper, roof portion to seal said first and second roof portions;

 said first, lower, roof portion comprises a flat portion;

 said flat portion is configured to extend over a substantial portion of said roof arrangement;

 a plurality of said spray nozzles orifices is disposed in said flat portion;

 said plurality of spray nozzles orifices is disposed and configured to spray liquid over sealed containers;

 said second, upper, roof portion comprises a cover for said first, lower, roof portion;

 said second, upper, roof portion comprises a conduit arrangement; and

said conduit arrangement is configured and disposed to permit the supply of liquid to said plurality of spray nozzles orifices.

37. (currently amended) A product pasteurizing section for a beverage container filling plant for filling beverage containers with a beverage, said product pasteurizing section being configured to permit at least heating and cooling of the content in the containers, said product pasteurizing section comprising:

a housing comprising a roof arrangement, an inlet arrangement configured to receive containers into said housing, and an outlet arrangement configured to discharge containers from said housing;

a plurality of sprayers being disposed in said roof arrangement to permit spraying of the containers from above the containers;

each of said plurality of sprayers comprising a spray nozzle
being configured to spray a stream of liquid;

each of said spray nozzles being disposed integrally within said
roof arrangement;

said plurality of sprayers in said roof arrangement comprising:

a first roof portion of sprayers;

said first roof portion being configured:

to receive containers from said inlet arrangement; and

to be disposed to heat the beverage in containers with a first, heated, spray of liquid having a predetermined first temperature to bring the beverage in containers to a temperature below the pasteurization temperature of the beverage;

a second roof portion of sprayers;

said second roof portion being configured to pasteurize the beverage in containers with a second, heated, spray of liquid having a predetermined second temperature to bring the beverage in containers to the pasteurization temperature of the beverage; and

a third roof portion of sprayers;

said third roof portion being configured to cool the beverage in containers with a third spray of liquid having a predetermined third temperature to bring the beverage in containers to a temperature below said second temperature;

said second roof portion being configured:

to be disposed adjacent to said first roof portion; and

to receive containers from said first roof portion; and

said third roof portion being configured:

to be disposed adjacent to said second roof portion;

to receive containers from said second roof portion;

and

to discharge containers through said outlet

arrangement from said housing.

38. (currently amended) The product pasteurizing section according to claim 37, wherein:

said housing has a longitudinal axis extending from said inlet arrangement to said outlet arrangement of said housing;

said roof arrangement comprises a plurality of depressions configured and disposed to receive liquid to be sprayed over containers;

each one of said depressions has a pair of walls extending in the direction of said longitudinal axis of said housing;

each one of said depressions has a planar bottom surface;

each one of said pair of walls has a length;

each one of said depressions has a width between a pair of walls;

said length of each wall is greater than said width between a pair of walls;

~~said plurality of sprayers comprises a plurality of spray orifices configured and disposed to spray liquid over containers;~~

each planar bottom surface is configured to have a plurality of said spray nozzles orifices disposed therein;

said housing has a first side;

said inlet arrangement is disposed in said first side;

said housing has a second side;

said outlet arrangement is disposed in said second side;

said roof arrangement comprises a first inlet for liquid;

said first inlet for liquid is disposed at said first side of said housing;

said first inlet is configured to permit entry of liquid in a flow of liquid in the direction from said first side to said second side of said housing;

at least one of said plurality of depressions is configured and disposed to receive liquid from said first inlet and to pass the received liquid through said spray nozzles orifices disposed in the planar bottom surface of said at least one depression over containers;

said roof arrangement comprises a second inlet for liquid;

said second inlet for liquid is disposed at said second side of

said housing;

 said second inlet liquid is configured to permit entry of liquid in a flow of liquid in the direction from said second side to said first side of said housing; and

 at least one of said plurality of depressions is configured and disposed to receive liquid from said second inlet and to pass the received liquid through said spray nozzles ~~orifices~~ disposed in the planar bottom surface of said at least one depression over containers.

39. (original) The product pasteurizing section according to claim 38, wherein each one of said pair of walls comprises a pair of sloping walls.

40. (original) The product pasteurizing section according to claim 39, wherein:

 said housing comprises a frame structure;

 said roof arrangement comprises a plurality of roof sections disposed in said frame structure;

 said roof arrangement comprises a plurality of cover arrangements disposed above said plurality of roof sections;

 said plurality of cover arrangements is configured to cover said plurality of roof sections; and

at least one of said plurality of cover arrangements comprises a hinge arrangement configured and disposed to permit movement of said at least one cover arrangement between a first position in which said at least one cover arrangement is disposed to cover a plurality of sprayers and a second position in which said at least one cover arrangement is disposed to expose a plurality of sprayers.

41. (original) The product pasteurizing section according to claim 37, wherein:

 said roof arrangement comprises a single cover arrangement; and

 said cover arrangement is disposed above said plurality of sprayers and configured to cover substantially all of said plurality of sprayers.

42. (original) The product pasteurizing section according to claim 37, wherein:

 said roof arrangement comprises a first, lower roof portion and a second, upper, roof portion disposed above said first, lower, roof portion; and

 a seal is disposed between said first, lower, roof portion and said second, upper, roof portion to seal said first and second roof

portions.

43. (currently amended) The product pasteurizing section according to claim 42, wherein:

 said first, lower, roof portion comprises a flat portion;

 said flat portion is configured to extend over a substantial portion of said roof arrangement;

 a plurality of said spray nozzles orifices is disposed in said flat portion;

 said plurality of spray nozzles orifices is disposed and configured to spray liquid over sealed containers;

 said second, upper, roof portion comprises a cover for said first, lower, roof portion;

 said second, upper, roof portion comprises a conduit arrangement; and

 said conduit arrangement is configured and disposed to permit the supply of liquid to said plurality of spray nozzles orifices.